

Comparisons of Job Characteristics

Focus Occupation: Computer Programmers (15-1021)

Associated Occupation: Computer Systems Analysts (15-1051)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 86

Focus Occupation: Computer Programmers (15-1021)

Associated Occupation: Computer Systems Analysts (15-1051)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Computers and Electronics	8.4	19.3	24.2	>>	Current knowledge level is likely more than sufficient
Customer and Personal Service	11.3	15.4	9.0	<<	Extensive education and/or training may be required
Education and Training	9.2	13.2	6.2	<<	Extensive education and/or training may be required
Administration and Management	8.4	11.3	9.6	<	Expanded education and/or training may be required
Engineering and Technology	5.7	11.0	5.7	<<	Extensive education and/or training may be required
Telecommunications	3.9	6.8	4.8	<<	Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 74

Focus Occupation: Computer Programmers (15-1021)

Associated Occupation: Computer Systems Analysts (15-1051)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Systems Evaluation	6.4	12.7	10.1	<	A higher skill level may be required
Active Learning	8.7	12.6	9.0	<<	Extensive development of skills in this area may be required
Systems Analysis	6.5	12.6	9.2	<<	Extensive development of skills in this area may be required
Operations Analysis	5.0	10.6	10.1	0	Current skill level may be sufficient
Quality Control Analysis	5.9	10.3	11.6	>	Skill level is likely sufficient

Programming	2.2	10.2	17.3	>>	Skill level is likely more than sufficient
Technology Design	2.6	9.7	6.2	<<	Extensive development of skills in this area may be required
Troubleshooting	4.5	8.9	2.6	<<	Extensive development of skills in this area may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 95			
Focus Occupation: Computer Programmers (15-1021) Associated Occupation: Computer Systems Analysts (15-1051)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Deductive Reasoning	10.6	13.9	12.2	<	Some improvement in abilities may be required
Information Ordering	9.9	12.9	12.8	0	Current ability level may be sufficient
Fluency of Ideas	7.6	12.7	8.3	<<	Extensive improvement in abilities may be required
Category Flexibility	9.0	11.8	9.4	<	Some improvement in abilities may be required
Originality	7.6	11.6	8.7	<<	Extensive improvement in abilities may be required
Flexibility of Closure	7.8	10.4	7.6	<<	Extensive improvement in abilities may be required
Mathematical Reasoning	6.3	10.3	10.2	0	Current ability level may be sufficient
Speed of Closure	5.9	8.8	3.7	<<	Extensive improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 100
Focus Occupation: Computer Programmers (15-1021) Associated Occupation: Computer Systems Analysts (15-1051)		
Work Activities	Exclusivity of Activity	
Adjust computer operation system	84	
Analyze workflow	89	
Communicate technical information	4	
Consult with customers concerning needs	69	
Design computer hardware or software interface	87	
Design computer programs or programming tools	92	
Develop or maintain databases	30	
Develop records management system	76	

Develop tables depicting data	33
Encode equations for processing	99
Evaluate computer system user requests or requirements	81
Follow data security procedures	77
Follow data storage procedures	75
Implement computer system changes	92
Install computer programs	89
Maintain client-server database	89
Maintain or repair computers or related equipment	81
Monitor computer operation	85
Prepare technical reports or related documentation	22
Prepare workflow chart	95
Program computers for electronic engineering applications	87
Program computers for management analysis applications	95
Program computers for medical applications	99
Program computers for social science applications	99
Program computers using existing software	85
Program mainframe computer	84
Provide technical computer training	82
Provide technical support to computer users	80
Recommend software or hardware purchases	85
Resolve computer program operational problems	99
Resolve symbolic formulations in data processing applications	89
Revise or correct errors in computer programs, software, or systems	85
Supervise programming personnel	95
Test computer programs or systems	78
Use computer application flow charts	84
Use computer programming language	82
Use computers to enter, access or retrieve data	3
Use geographical information system (GIS) software	72
Use interpersonal communication techniques	10
Use knowledge of mainframe computers	78
Use object-oriented computer programming techniques	85
Use project management techniques	47
Use relational database software	26
Use spreadsheet software	18
Use structural analysis techniques to analyze computer systems	89
Write computer software, programs, or code	84
Write documentation for computer programming	87

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

**Similarity of Focus
Occupation to Associated
Occupation: 88**

Focus Occupation: Computer Programmers (15-1021)
Associated Occupation: Computer Systems Analysts (15-1051)

Tools and Technologies	Exclusivity
Business function specific software	1
Computers	1
Content authoring and editing software	1
Content management software	6
Data management and query software	1
Development software	4
Industry specific software	1
Network applications software	1
Operating environment software	12

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.